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Search Results - Record(s) 1 through 21 of 21 returned.

☐ 1. Document ID: US 20020099303 A1

L3: Entry 1 of 21 File: PGPB Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020099303
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020099303 A1

TITLE: Automated method for diagnosing and monitoring the outcomes of atrial fibrillation

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 20020099302 A1

L3: Entry 2 of 21 File: PGPB Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020099302
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020099302 A1

TITLE: System and method for providing diagnosis and montoring of congestive heart faliure for use in automated patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 20020099301 A1

L3: Entry 3 of 21 File: PGPB Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020099301
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020099301 A1

TITLE: System and method for providing patient status diagnosis for use in automated patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 4. Document ID: US 20020052542 A1

L3: Entry 4 of 21 File: PGPB May 2, 2002

PGPUB-DOCUMENT-NUMBER: 20020052542
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020052542 A1

TITLE: System and method for providing collection and analysis of patient information for use in automated patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 5. Document ID: US 20020049615 A1

L3: Entry 5 of 21 File: PGPB Apr 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020049615
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020049615 A1

TITLE: Automated disease management system

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 6. Document ID: US 20020029002 A1

L3: Entry 6 of 21 File: PGPB Mar 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020029002
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020029002 A1

TITLE: Automated collection and analysis patient care system for managing the pathophysiological outcomes of atrial fibrillation

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 7. Document ID: US 20020026103 A1

L3: Entry 7 of 21 File: PGPB Feb 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020026103
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020026103 A1

TITLE: Deep computing applications in medical device systems

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 8. Document ID: US 20020022776 A1

L3: Entry 8 of 21 File: PGPB Feb 21, 2002

PGPUB-DOCUMENT-NUMBER: 20020022776
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020022776 A1

TITLE: Computer readable storage medium containing code for automated collection and analysis of patient information retrieved from an implantable medical device for remote patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 9. Document ID: US 20010051764 A1

L3: Entry 9 of 21 File: PGPB Dec 13, 2001

PGPUB-DOCUMENT-NUMBER: 20010051764
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010051764 A1

TITLE: System and method for analyzing patient information for use in automated patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 10. Document ID: US 20010037057 A1

L3: Entry 10 of 21 File: PGPB Nov 1, 2001

PGPUB-DOCUMENT-NUMBER: 20010037057
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010037057 A1

TITLE: System and method for analyzing normalized patient voice feedback an automated collection and analysis patient care system

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 11. Document ID: US 20010025138 A1

L3: Entry 11 of 21 File: PGPB Sep 27, 2001

PGPUB-DOCUMENT-NUMBER: 20010025138
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010025138 A1

TITLE: System and method for processing normalized voice feedback for use in automated patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 12. Document ID: US 20010007053 A1

L3: Entry 12 of 21 File: PGPB Jul 5, 2001

PGPUB-DOCUMENT-NUMBER: 20010007053
PGPUB-FILING-TYPE: new-utility
DOCUMENT-IDENTIFIER: US 20010007053 A1

TITLE: System and method for automated collection and analysis of patient information retreived from an implantable medical device for remote patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 13. Document ID: US 6411840 B1

L3: Entry 13 of 21 File: USPT Jun 25, 2002

US-PAT-NO: 6411840
DOCUMENT-IDENTIFIER: US 6411840 B1

TITLE: Automated collection and analysis patient care system and method for diagnosing and monitoring the outcomes of atrial fibrillation

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 14. Document ID: US 6401072 B1

L3: Entry 14 of 21 File: USPT Jun 4, 2002

US-PAT-NO: 6401072
DOCUMENT-IDENTIFIER: US 6401072 B1

TITLE: Clinical critical care path system and method of using same

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 15. Document ID: US 6358203 B2

L3: Entry 15 of 21 File: USPT Mar 19, 2002

US-PAT-NO: 6358203
DOCUMENT-IDENTIFIER: US 6358203 B2

TITLE: System and method for automated collection and analysis of patient information retrieved from an implantable medical device for remote patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 16. Document ID: US 6336903 B1

L3: Entry 16 of 21 File: USPT Jan 8, 2002

US-PAT-NO: 6336903
DOCUMENT-IDENTIFIER: US 6336903 B1

TITLE: Automated collection and analysis patient care system and method for diagnosing and monitoring congestive heart failure and outcomes thereof

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 17. Document ID: US 6331160 B1

L3: Entry 17 of 21 File: USPT Dec 18, 2001

US-PAT-NO: 6331160
DOCUMENT-IDENTIFIER: US 6331160 B1

TITLE: System and method for providing patient status feedback via an automated patient care system with speech-based wellness monitoring

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 18. Document ID: US 6312378 B1

L3: Entry 18 of 21 File: USPT Nov 6, 2001

US-PAT-NO: 6312378
DOCUMENT-IDENTIFIER: US 6312378 B1

TITLE: System and method for automated collection and analysis of patient information retrieved from an implantable medical device for remote patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 19. Document ID: US 6270457 B1

L3: Entry 19 of 21 File: USPT Aug 7, 2001

US-PAT-NO: 6270457
DOCUMENT-IDENTIFIER: US 6270457 B1

TITLE: System and method for automated collection and analysis of regularly retrieved patient information for remote patient care

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 20. Document ID: US 6261230 B1

L3: Entry 20 of 21 File: USPT Jul 17, 2001

US-PAT-NO: 6261230
DOCUMENT-IDENTIFIER: US 6261230 B1

TITLE: System and method for providing normalized voice feedback from an individual patient in an automated collection and analysis patient care system

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 21. Document ID: US 6203495 B1

L3: Entry 21 of 21 File: USPT Mar 20, 2001

US-PAT-NO: 6203495
DOCUMENT-IDENTIFIER: US 6203495 B1

TITLE: System and method for providing normalized voice feedback from an individual patient in an automated collection and analysis patient care system

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Terms	Documents
(automatic$6 or automat$3) same (gather$3 or track$6 or benckmark$3 or collect$6) same patient adj care and (diagnos$6 or prognos$6) same (malad$3 or ill$6 or sick$6)	21

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Previous Page Next Page

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L9: Entry 2 of 3 File: USPT Aug 13, 1996

DOCUMENT-IDENTIFIER: US 5544651 A
TITLE: Medical system and associated method for automatic treatment

Brief Summary Text (34):
The device and method of the instant invention are particularly suitable for treating patients who have a life threatening condition which has been generally diagnosed but which is characterized by recurrent episodes. Generally, the patient and those around him must take care to detect recurrences of the condition, in time to administer proper medication.

Drawing Description Text (7):
FIG. 6 is a block diagram of a computerized slide scanning system.

Detailed Description Text (3):
Monitoring and measuring device 20 is connected at an output to a digitizer 22 which converts normally analog type signals into coded binary pulses and transmits the resulting digital measurement signal to a computer 24. Digitizer 22 may be incorporated into a housing (not shown) enclosing all or part of the monitoring and measuring device 20. Moreover, digitizer may be an integral part of monitoring and measuring device 20.

Detailed Description Text (4):
Computer 24 receives instructions and additional input from a keyboard 26. Keyboard 26 is used to feed computer 24 information for identifying the patient, for example, the patient's age, sex, weight, and known medical history and conditions. Such medical conditions may include past diseases and genetic predispositions.

Detailed Description Text (5):
Computer 24 is also connected to an external memory 28 and an output device 30 such as a printer or monitor. Memory 28 stores medical data for a multiplicity of previously diagnosed medical conditions which are detectable by analysis of data provided by monitoring and measuring device 20.

Detailed Description Text (6):
As illustrated in FIG. 2, monitoring and measuring device 20 detects a magnitude of a predetermined biological or physiological parameter in a step 32. Digitizer 22 converts the detected magnitude into a pre-established digital format in a step 34 and transmits the digital signal to computer 24 in a step 36. Computer 24 is operated in a step 38 to compare the digitized data from monitoring and measuring device 20 with the data stored in memory 28 and to derive a diagnosis as to the patient's condition. The diagnosis is then communicated to the user (operator) and to the patient via output device 30 in a step 40.

Detailed Description Text (7):
If monitoring and measuring device 20 measures a physiological function characterized by a plurality of different variables, for example, the electric potential at different points on the patient's body (EEG, EKG, EMG), these variables may be broken down by computer 24 into one or more parameters, e.g., a frequency packet. The measured values of the pre-established parameters are then compared with parameter ranges stored in memory 28 for the type of parameter and the kind of patient, as characterized by sex, age, weight, etc. If the measured values of the pre-established parameters fall within expected ranges, as stored in memory 28, the computer 28 communicates a "normalcy" finding via printer 30. If, on the contrary, the measured values of one or more parameters fall outside the normal ranges, then a diagnosis of a possible medical condition is printed out.

Detailed Description Text (9):

Scanner 42 is connected via an interface 44 to computer 24.

Detailed Description Text (10):
As shown in FIG. 3, scanner 42 obtains an image of a tissue or organ in a step 46. The image is digitized, either by scanner 42 or interface 44 in a step 48, and is transmitted to computer 24 in a step 50. Computer 24 is operated in a step 52 to analyze the image from scanner 42 and determine specific values for a multiplicity of predetermined parameters. For example, in the event that scanner 42 takes the particular form of a video camera for dermatological diagnosis, an image of a skin surface of a patient is analyzed by computer 24 to derive such parameters as percentage of skin covered by abnormal condition, the range of sizes of individual ulcers, the range of color variation (e.g., whether bleeding is symptomatic).

Detailed Description Text (11):
The specific values of pre-established parameters calculated by computer 24 from electrically encoded images transmitted from scanner 42 are compared by computer 24 with previously determined parameter ranges stored in memory 28. For example, if a pregnant woman's fetus is being scanned by ultrasonography, the lengths of the fetal appendages, arms, legs, fingers, etc., are compared with each other and with respective fetal appendage ranges recorded in memory 28 for the stage of pregnancy, weight of the fetus, and possibly weight of the mother. In the event that any appendages are missing or are of abnormal length, a diagnosis as to possible deformity is printed out. Organs internal to the fetus may be similarly examined automatically by scanner 42 and computer 24. In more advanced stages of pregnancy, physiological functions such as the heart rate of the fetus may be automatically monitored for abnormal conditions.

Detailed Description Text (12):
The analysis performed by computer 24 on the image from scanner 42 will depend in part on the region of the patient's body being scanned. If a woman's breast or a person's cortex is being monitored for tumorous growths, computer 24 is programmed to separate the tissue image into regions of different textures. The different textured regions are parameterized as to size, shape and location and the derived parameters are compared to values in memory 30 to determine the presence of a tumor. Additional analysis is undertaken to detect lines in an image which may indicate the presence of an organic body.

Detailed Description Text (14):
Memory 28 may store entire images related to different diseases. For example, memory 28 may store images of skin conditions in the event that scanner 42 takes the form of a video camera at a dermatological diagnosis and treatment facility. In a step 54 (FIG. 3), computer 24 compares the image of a patient's skin with previously stored images in memory 28, for example, by breaking down the current image into sections and overlaying the sections with sections of the stored images, at variable magnification levels.

Detailed Description Text (15):
In the event that scanner 42 takes the form of an MRI apparatus or CAT scanner, the images stored in memory 28 are of internal organic structures. In step 54 (FIG. 3), computer 24 compares images of a person's internal organs with previously stored organ images in memory 28. Computer 24 partitions the image from the MRI apparatus or CAT scanner into subareas and overlays the subareas with sections of the stored images, at variable magnification levels.

Detailed Description Text (16):
In a final step 40 (FIG. 3), computer 24 communicates the results of its diagnostic evaluation to a user or patient.

Detailed Description Text (17):
As illustrated in FIG. 4, a medical diagnostic system comprises a plurality of remote automated diagnostic stations 60a and 60b connected via respective telecommunications links 62a and 62b to a central computer 64. Each diagnostic station 60a, 60b may take the form shown in FIG. 1, local computer 24 communicating via link 62a, 62b with central computer 64. Alternatively, each diagnostic station 60a, 60b may take the form shown in FIG. 4 and include a respective plurality of monitoring and measuring devices 66a, 66b, . . . 66n operatively connected to a local computer 68 via respective digitizer output units 70a, 70b, . . . 70n. Computer 68 is fed instructions and data from a keyboard 72 and communicates diagnostic results via a monitor 74 or printer 76. As discussed hereinabove with reference to monitoring and measuring device 20 of FIG. 1, each monitoring and measuring device 66a, 66b, . . . 66n is juxtaposable to a patient for collecting individualized medical data about the patient's condition.

Monitoring and measuring devices 66a, 66b, . . . 66n may resepctively take the form of an electronic thermometer, an electronic blood pressure gauge, a pulmonary function apparatus, a doppler study apparatus, an EEG machine, an EKG machine, an EMG machine, or a pressure measurement device, etc.

Detailed Description Text (18):
Digitizers 70a, 70b, . . . 70n convert normally analog type signals into coded binary pulses and transmit the resulting digital measurement signals to computer 68. Digitizers 70a, 70b, . . . 70n may be incorporated into the housings or casing (not shown) enclosing all or part of the respective monitoring and measuring devices 66a, 66b, . . . 66n.

Detailed Description Text (19):
Keyboard 72 is used to feed computer 68 information for identifying the patient, for example, the patient's age, sex, weight, and known medical history and conditions. Such medical conditions may include past diseases and genetic predispositions.

Detailed Description Text (20):
As further illustrated in FIG. 4, a plurality of diagnostic image generating apparatuses or scanners 78a, 78b, . . . 78i are also connected to central computer 64 via respective telecommunications links 80a, 80b, . . . 80i. Scanners 78a, 78b, . . . 78i each generate in electrically encoded form a visually readable image of an organic part of the patient. Scanners 78a, 78b, . . . 78i may each take the form of an MRI apparatus, a CAT scanner, an X-ray machine, an ultrasonography apparatus, or a video camera with or without magnification optics for magnifying a sample on a slide.

Detailed Description Text (21):
Because of the enormous quantity of data necessary for storing images, central computer 64 is connected to a bank of memories 82 at a central storage and information processing facility 84. Diagnosis of patient conditions may be undertaken by central computer 64 alone or in cooperation with local computers 24 or 68.

Detailed Description Text (22):
As illustrated in FIG. 5, local computers 24 and 68 transmit information to central computer 64 in data packets or modules each include a first string of binary bits 86 representing the transmitting station 60a, 60b, a second bit string 88 identifying the patient, a bit group 90 designating the parameter which is being transmitted, another bit group 92 coding the particular measured value of the parameter, a set of bits 94 identifying the point on the patient at which the measurement was taken, and another bit set 96 carrying the time and date of the measurement. Other bit codes may be added as needed.

Detailed Description Text (23):
As shown in FIG. 6, a computerized slide scanning system comprises a slide carrier 100 mountable to a microscope stage and a slide positioning device 102 mechanically linked to the slide carrier 100 for shifting the carrier along a path determined by a computer 104. Computer 104 may be connected to an optional transport or feed assembly 106 which delivers a series of slides (not shown) successively to slide carrier 100 and removes the slides after scanning.

Detailed Description Text (24):
Computer 104 is also connected to an optical system 108 for modifying the magnification power thereof between successive slide scanning phases. Light emerging from optical system 108 is focused thereby onto a charge coupled device ("CCD") 110 connected to computer 104 for feeding digitized video images thereto.

Detailed Description Text (25):
Computer 104 performs a line and texture analysis on the digitized image information from CCD 110 to determine the presence of different organic structures and microorganisms. The different textured regions are parameterized as to size, shape and location and the derived parameters are compared to values in a memory to identify microscopic structures. The texture and line scanning is repeated at different magnification levels.

Detailed Description Text (26):
Computer 104 may be connected to a keyboard 112, a printer 114, and a modem 116. Modem 116 forms part of a telecommunications link for connecting computer 104 to a remote data processing unit such as computer 64 in FIG. 4.

Detailed Description Text (27):
Image generating apparatus 42 in FIG. 1 may take the form of the computerized slide scanning system of FIG. 6.

Detailed Description Text (29):
The system of FIG. 7 enables the transmission of specialized medical data directly over the telephone lines to a central computer (e.g. computer 64 in FIG. 4) which utilizes the incoming data to perform a diagnostic evaluation on the patient.

Detailed Description Text (37):
As illustrated in FIGS. 10 and 11, a medical diagnostic and treatment system comprises a scanner pad 160 provided on one side with a two-sided (replaceable) adhesive layer 162 which is attachable to the skin of a patient in the region of the spleen or an aortic aneurysm for collecting individualized dimensional data about a splenic hematoma or the aneurysm. Pad 160 carries one or more ultrasonic electroacoustic transducers 164 and a plurality of ultrasonic acousto-electric transducers 166.

Detailed Description Text (38):
Transducer 164 is connected via a lead 168 to an ultrasonic signal generator 170 disposed in a housing 172 and energized periodically under the control of a microprocessor or computer 174, whereby transducer 164 produces ultrasonic pressure waves of a predetermined frequency and intensity for transmission through the organic tissues of the patient to the subject organ. The ultrasonic pressure waves are reflected by the organ, and particularly by the structural defect thereof, to transducers or sensors 166.

Detailed Description Text (49):
As depicted in FIG. 13, a medical treatment device comprises a sensor 214 functioning to at least periodically measure a predetermined physiological parameter of a patient. Sensor 214 generates an electrical signal encoding a measured value of the physiological parameter. A comparator 216 is operatively connected to sensor 214 via a digitizer 218 for comparing the measured value of the physiological parameter with a predetermined threshold value for the physiological parameter, stored in a register or memory element 219, to determine whether the measured value of the physiological parameter has passed the threshold value. In the event that comparator 216 determines that the predetermined threshold value has been passed, the comparator transmits a signal to a drive element 220 such as a solenoid or miniature electric motor to open a valve 222 and thereby permit a preselected medication or chemical composition to become injected into the patient from a pressurized reservoir 224. The medication or chemical composition is selected to treat a prediagnosed illness of the patient, the illness being characterized by a detectable change in the measured physiological parameter. At least some of the components 214, 216, 218, 220, 222, and 224 of the medical treatment device of FIG. 13 are contained in a common casing or housing 226 which is attachable to the patient as described in detail hereinafter.

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L10: Entry 46 of 94 File: USPT Apr 9, 2002

DOCUMENT-IDENTIFIER: US 6370511 B1
TITLE: Computer-implemented method for profiling medical claims

Abstract Text (1):
A computer-implemented method for profiling medical claims to assist health care managers in determining the cost-efficiency and service quality of health care providers. The method allows an objective means for measuring and quantifying health care services. An episode treatment group (ETG) is a patient classification unit, which defines groups that are clinically homogenous (similar cause of illness and treatment) and statistically stable. The ETG grouper methodology uses service or segment-level claim data as input data and assigns each service to the appropriate episode. The program identifies concurrent and recurrent episodes, flags records, creates new groupings, shifts groupings for changed conditions, selects the most recent claims, resets windows, makes a determination if the provider is an independent lab and continues to collect information until an absence of treatment is detected.

Brief Summary Text (2):
The present invention relates generally to computer-implemented methods for processing medical claims information. More particularly, the present invention relates to a computer-implemented method for receiving input data relating to a person s medical claim, establishing a management record for the person, establishing episode treatment groups to define groupings of medical episodes of related etiology, correlating subsequent medical claims events to an episode treatment group and manipulating episode treatment groups based upon time windows for each medical condition and co-morbidities.

Brief Summary Text (4):
Due to an increase in health care costs and inefficiency in the health care system, health care providers and service management organizations need health care maintenance systems which receive input medical claim data, correlate the medical claim data and provide a means for quantitatively and qualitatively analyzing provider performance. Because of the complex nature of medical care service data, many clinicians and administrators are not able to efficiently utilize the data. A need exists for a computer program that transforms inpatient and out patient claim data to actionable information, which is logically understood by clinicians and administrators.

Brief Summary Text (5):
Performance is quickly becoming the standard by which health care purchasers and informed consumers select their health care providers. Those responsible for the development and maintenance of provider networks search for an objective means to measure and quantify the health care services provided to their clients. Qualitative and quantitative analysis of medical provider performance is a key element for managing and improving a health care network. Operating a successful health care network requires the ability to monitor and quantify medical care costs and care quality. Oftentimes, success depends on the providers' ability to identify and correct problems in their health care system. A need exists, therefore, for an analytical tool for identifying real costs in a given health care management system.

Brief Summary Text (7):
For many years, computer-implemented programs for increasing health care efficiency have been available for purchase. Included within the current patent literature and competitive information are many programs that are directed to the basic concept of health care systems.

Brief Summary Text (8):
The Mohlenbrock, et al. patent, U.S. Pat. No. 4,667,292, issued in 1987, discloses a

medical reimbursement computer system which generates a list identifying the most appropriate diagnostic-related group (DRG) and related categories applicable to a given patient for inpatient claims only. The list is limited by a combination of the characteristics of the patient and an initial principal diagnosis. A physician can choose a new designation from a list of related categories while the patient is still being treated. The manually determined ICD-9 numbers can be applied to an available grouper computer program to compare the working DRG to the government's DRG.

Brief Summary Text (9):
The Mohlenbrock, et al. patent, U.S. Pat. No. 5,018,067, issued in 1991, discloses an apparatus and method for improved estimation of health resource consumption through the use of diagnostic and/or procedure grouping and severity of illness indicators. This system is a computer-implemented program that calculates the amount of payment to the health provider by extracting the same input data as that identified in the Mohlenbrock '292 Patent teaching the DRG System. The system calculates the severity of the patient's illness then classifies each patient into sub-categories of resource consumption within a designated DRG. A computer combines the input data according to a formula consisting of constants and variables. The variables are known for each patient and relate to the number of ICD codes and the government weighing of the codes. The software program determines a set of constants for use in the formula for a given DRG that minimizes variances between the actual known outcomes and those estimated by use of the formula. Because it is based upon various levels of illness severity within each diagnosis, the results of this system provide a much more homogenous grouping of patients than is provided by the DRGs. Providers can be compared to identify those providers whose practice patterns are of the highest quality and most cost efficient. A set of actual costs incurred can be compared with the estimated costs. After the initial diagnosis, the system determines the expected costs of treating a patient.

Brief Summary Text (18):
Health Chex's PEER-A-MED computer program is a physician practice profiling system that provides case-mix adjusted physician analysis based on a clinical severity concept. The system employs a multivariate linear regression analysis to appropriately adjust for case-mix. After adjusting for the complexity of the physician's caseload, the system compares the relative performance of a physician to the performance of the peer group as a whole. The system also compares physician utilization performance for uncomplicated, commonly seen diagnosis. Because the full spectrum of clinical care that is rendered to a patient is not represented in its databases, the system is primarily used as an economic performance measurement tool. This system categorizes the claims into general codes including acute, chronic, mental health and pregnancy. Comorbidity and CPT-4 codes adjust for acuity level. The codes are subcategorized into twenty cluster groups based upon the level of severity. The system buckets the codes for the year and contains no apparent episode building methodology. While the PEER-A-MED system contains clinically heterogeneous groupings, the groupings are not episode-based and recurrent episodes cannot be accounted.

Brief Summary Text (21):
The GMIS system uses a bucketing procedure that profiles by clumps of diagnosis codes including 460 diagnostic episode clusters (DECs). The database is client specific and contains a flexible number and type of analytic data files. This system is episode-based, but it does not account for recurrent episodes, so a patient's complete data history within a one-year period is analyzed as one pseudo-episode. Signs and symptoms do not cluster to the actual disease state, e.g. abdominal pain and appendicitis are grouped in different clusters. This system does not use CPT-4 codes and does not shift the DEC to account for acuity changes during the treatment of a patient.

Brief Summary Text (22):
Value Health Sciences offers a value profiling system, under the trademark VALUE PROFILER, which utilizes a DB2 mainframe relational database with 1,800 groups. The system uses ICD9 and CPT-4 codes, which are bucket codes. Based on quality and cost-effectiveness of care, the system evaluates all claims data to produce case-mix-adjusted profiles of networks, specialties, providers and episodes of illness. The pseudo-episode building methodology contains clinically pre-defined time periods during which claims for a patient are associated with a particular condition and designated provider. The automated practice review system analyzes health care claims to identify and correct aberrant claims in a pre-payment mode (Value Coder) and to profile practice patterns in a post-payment mode (Value Profiler). This system does not link signs and symptoms and the diagnoses are non-comprehensive because the profiling is based on the exclusion of services. No apparent shifting of episodes occurs and the

episodes can only exist for a preset time because the windows are not recurrent.

Brief Summary Text (23):
The medical claim profiling programs described in foregoing patents and non-patent literature demonstrate that, while conventional computer-implemented health care systems exist, they each suffer from the principal disadvantage of not identifying and grouping medical claims on an episodic basis or shifting episodic groupings based upon complications or co-morbidities. The present computer-implemented health care system contains important improvements and advances upon conventional health care systems by identifying concurrent and recurrent episodes, flagging records, creating new groupings, shifting groupings for changed clinical conditions, selecting the most recent claims, resetting windows, making a determination if the provider is an independent lab and continuing to collect information until an absence of treatment is detected.

Brief Summary Text (25):
Accordingly, it is a broad aspect of the present invention to provide a computer-implemented medical claims profiling system.

Brief Summary Text (40):
ETGs can identify a change in the patient's condition and shift the patient's episode from the initially defined ETG to the ETG that includes the change in condition. ETGs identify all providers treating a single illness episode, allowing the user to uncover specific treatment patterns. After adjusting for case-mix, ETGs measure and compare the financial and clinical performance of individual providers or entire networks.

Brief Summary Text (41):
Medical claim data is input as data records by data entry into a computer storage device, such as a hard disk drive. The inventive medical claims profiling system may reside in any of a number of computer system architectures, i.e., it may be run from a stand-alone computer or exist in a client-server system, for example a local area network (LAN) or wide area network (WAN).

Brief Summary Text (42):
Once relevant medical claim data is input, claims data is processed by loading the computer program into the computer system memory. During set-up of the program onto the computer system, the computer program will have previously set pointers to the physical location of the data files and look-up tables written to the computer storage device. Upon initialization of the inventive computer program, the user is prompted to enter an identifier for a first patient. The program then checks for open episodes for the identified patient, sets flags to identify the open episodes and closes any episodes based upon a predetermined time duration from date of episode to current date. After all open episodes for a patient are identified, the new claims data records are read to memory and validated for type of provider, CPT code and ICD-9 (dx) code, then identified as a management, surgery, facility, ancillary, drug or other record.

Drawing Description Text (3):
FIG. 1 is a diagrammatic representation of a computer system used with the computer-implemented method for analyzing medical claims data in accordance with the present invention.

Drawing Description Text (4):
FIG. 2 is a flow diagram illustrating the general functional steps of the computer implemented method for analyzing medical claims data in accordance with the present invention.

Drawing Description Text (6):
FIGS. 4A to 4F are flow diagrams illustrating the Management Record Grouping Sub-routine of the ETG Assignor Routine in accordance with the computer-implemented method of the present invention.

Drawing Description Text (7):
FIGS. 5A-5D are flow diagrams illustrating a Surgery Record Grouping Sub-routine of the ETG Assignor Routine in accordance with the computer-implemented method of the present invention.

Drawing Description Text (8):
FIGS. 6A-6E are flow diagrams illustrating a Facility Record Grouping Sub-routine of the ETG Assignor Routine in accordance with the computer-implemented method of the

present invention.

Drawing Description Text (9):
FIGS. 7A-B are flow diagrams illustrating an Ancillary Record Grouping Sub-routine of the ETG Assignor Routine in accordance with the computer-implemented method of the present invention.

Drawing Description Text (10):
FIGS. 8A-8C are flow diagrams illustrating a Drug Record Grouping Sub-routine of the ETG Assignor Routine in accordance with the computer-implemented method of the present invention.

Drawing Description Text (11):
FIG. 9 is a flow diagram illustrating the Episode Definer Routine in accordance with the computer-implemented method of the present invention.

Detailed Description Text (2):
Referring particularly to the accompanying drawings, the basic structural elements of a health care management system of the present invention are shown. Health care management system consists generally of a computer system 10. Computer system 10 is capable of running a computer program 12 that incorporates the inventive method is shown in FIG. 1. The computer system 10 includes a central processing unit (CPU) 14 connected to a keyboard 16 which allows the user to input commands and data into the CPU 14. It will be understood by those skilled in the art that CPU 14 includes a microprocessor, random access memory (RAM), video display controller boards and at least one storage means, such as a hard disk drive or CD-ROM. The computer system 10 also contains a video display 18 which displays video images to a person using the computer system 10. The video display screen 18 is capable of displaying video output in the form of text or other video images.

Detailed Description Text (3):
Episode Treatment Groups (ETGs) are used to define the basic analytical unit in the computer-implemented method of the present invention. ETGs are episode based and conceptually similar to Diagnostic Related Groups (DRGs), with a principal difference being that DRGs are inpatient only. ETGs encompass both inpatient and outpatient treatment.

Detailed Description Text (6):
An episode may be considered a low outlier or high outlier. Low outliers are episodes with dollar values below the minimum amount which is specific to each ETG. Examples of low outliers include patients which drop from a plan during mid-episode and patients who use out-of-network providers and do not submit claims. High outliers are those episodes with high dollar values greater than the 75th percentile plus 2.5 times the interquartile range, based upon a predefined database. The low and high outlier points are pre-determined and hard-coded into the inventive system and will vary across analysis periods.

Detailed Description Text (12):
If the claim is a prescription drug record, two pre-defined tables written to the computer data storage medium, are read. The first of the tables is a National Drug Code (NDC) by Generic Drug Code (GDC) table. The GDC code is equivalent to the Generic Drug Code table known in the art. This table acts as a translator table to translate a large number of NDCs to a smaller set of GCNs. A second pre-defined table is employed and is constructed as a GDC by ETG table. The GDC by ETG table is used, in conjunction with the NDC by GDC translator table, to identify all valid ETGs for a particular NDC code in the claim record.

Detailed Description Text (13):
To determine specific treatment patterns and performance contributions, the computer-implemented method identifies all providers treating a single illness episode. If a network of providers contains Primary Care Physicians (PCP), the ETGs clearly identify each treatment episode by PCP. Financial and clinical performance of individual providers or entire networks may be monitored and analyzed. To monitor health care cost management abilities of providers, components of a provider's treatment plan may be analyzed by uncovering casemix-adjusted differences in direct patient management, the use of surgery and the prescribing of ancillary services. By identifying excessive utilization and cost areas, continuous quality improvement protocols are readily engineered based on internally or externally derived benchmarks. After adjusting for location and using geographically derived normative charge

information, ETG-based analysis compares the cost performance of providers or entire networks. By using geographically derived utilization norms, the present invention forms the methodology base for measuring both prevalence and incidence rates among a given population by quantifying health care demand in one population and comparing it to external utilization norms. This comparison helps to identify health care providers who practice outside established utilization or cost norms.

Detailed Description Text (14):
Turning now to FIG. 2, there is illustrated the general operation of the computer-implemented method of the present invention. Those skilled in the art will understand that the present invention is first read from a removable, transportable recordable medium, such as a floppy disk, magnetic tape or a CD-ROM onto a recordable, read-write medium, such as a hard disk drive, resident in the CPU 14. Upon a user's entry of appropriate initialization commands entered via the keyboard 16, or other input device, such as a mouse or trackball device, computer object code is read from the hard disk drive into the memory of the CPU 14 and the computer-implemented method is initiated. The computer-implemented method prompts the user by displaying appropriate prompts on display 18, for data input by the user.

Detailed Description Text (23):
After the management, surgery, facility, ancillary and drug records are identified at steps 52, 54, 56, 58 and 60, respectively, an ETG Assignor Sub-routine is executed at step 62. The ETG Assignor Sub-routine 62 assigns patient medical claims to ETGs based one or more cluster of services related to the same episode, and provides for ETG shifting upon encountering a diagnosis code or CPT code which alters the relationship between the diagnosis or treatment coded in the claim record and an existing ETG assignment. For example, ETG's may be shifted to account for changes in clinical severity, for a more aggressive ETG treatment profile if a complication or comorbidity is encountered during the course of treatment for a given ETG or where a defining surgery is encountered during the course of treatment for a given ETG.

Detailed Description Text (25):
Operation of the Eligible Record Check routine 100 is illustrated in FIG. 3. The patient records input by the user are read from the recordable read-write data storage medium into the CPU 14 memory in step 102. From the patient records read to memory in step 102, a record validation step 104 is carried out to check provider type, treatment code and diagnosis code against pre-determined CPT code and diagnosis code look up tables. The diagnosis code is preferably the industry standard ICD-9 code and the treatment code is preferably the industry standard CPT-4 code. All valid patient records are assigned as one of a) management record, b) ancillary record, c) surgery record, d) facility record, e) drug record or f other record, and coded as follows:

Detailed Description Text (34):
The computer-implemented method of the present invention then initializes an Episode Assignor Routine 200, the operation of which is illustrated in FIGS. 4A-8C. Episode Assignor Routine 200 consists generally of five Sub-routine modules for processing management records, surgery records, facility records, ancillary records and drug records and assigning claims to proper ETGs. FIGS. 4A-4F illustrate initial identification of records as management, surgery, facility ancillary and drug records and the Management Record Grouping Sub-Routine. FIGS. 5A-5E illustrate operation of the Surgery Record Grouping routine 400 for matching surgery claim records to proper ETGs. FIGS. 6A-6E illustrate operation of the Facility Record Grouping routine 500 for matching facilities records to proper ETGs. FIGS. 7A-7 illustrate operation of the Ancillary Record Grouping routine 600 for matching ancillary records to proper ETGs. Finally, FIGS. 8A-8C illustrate operation of the Drug Records Grouping routine 700 for matching drug records to proper ETGs.

Detailed Description Text (47):
Turning now to FIG. 4B, which is a continuation from designator AA 236 of FIG. 4A, identifier ETGs for the second to fourth diagnoses in the management record are matched to active ETGs in logical operand 237. If an affirmative response is returned in response to logical operand 237, the matched active ETG with the most recent DOS-to is selected in step 240. If there is a tie between two or more ETGs with the most recent DOS-to value, the most recent DOS-from ETG is selected. If, however, there is a tie between two or more active ETGs with the most recent DOS-from value, then the first encountered ETG is selected in step 240. A value of one is then added to the sequential anchor record counter in step 241 and operation of the computer-implemented method continues as indicated by designator G 243 bridging to FIG. 5C.

Detailed Description Text (100):
FIG. 10 provides an example of Management and Ancillary record clustering over a hypothetical time line for a single patient over a one year period from January, 1995 to December, 1995. FIG. 10 depicts time frames of occurrences for claims classified as management records, i.e., office visit 84, hospital or emergency room visit 85, and surgery and surgical follow-up 86 and for claims records classified as ancillary records, i.e., laboratory tests 87, X-ray and laboratory tests 88 and x-ray 89. Two time lines are provided. A first timeline 71 includes the diagnosis and the time duration of the diagnosed clinical condition. A second timeline 72 includes the claim events which gave rise to the medical claims. Where claim events occur more than once, an alphabetic designator is added to the reference numeral to denote chronological order of the event. For example, the first office visit is denoted 84a, the second office visit is denoted 84b, the third denoted 84c, etc. Vertical broken lines denote the beginning and end of each Episode Treatment Group 90, and facilitate correlation of the episode event, e.g., office visit, with the resulting diagnosis, e.g., bronchitis.

Detailed Description Text (104):
Some months later, the patient has a seventh office visit 84g which resulted in a diagnosis of bronchitis 80. However, because the time period between the prior bronchitis episode 76 and the current bronchitis episode 80 exceeds a pre-determined period of time in which there was an absence of treatment for bronchitis, the bronchitis episode 90a is closed and the bronchitis episode 90e is opened. A hospital record 85 occurs as a result of an eye trauma and eye trauma 81 is the resulting diagnosis. Because the eye trauma 85 is unrelated to the bronchitis 80, a new eye trauma ETG 90f is started which is open concurrently with the bronchitis ETG 90e. An eighth office visity 84h occurs during the time when both ETG 90e and ETG 90f are open. Eighth office visity 84h is, therefore, grouped to the ETG most relevant to the office visity 84h, i.e., ETG 90e. A subsequent x-ray record 89b occurs and is related to the eye trauma diagnosis and is, therefore, grouped to ETG 90f. Because and absence of treatment has occured for the bronchitis ETG 90e, that ETG 90e is closed.

CLAIMS:

1. A computer-implemented method of grouping pharmaceutical claims data, comprising the steps of:

(a) reading pharmaceutical claims data, input as at least one of a plurality of data records, into a computer memory;

(b) validating each of the at least one of a plurality of data records for a valid drug code;

(c) reading at least one pre-defined relationship between the valid drug code in the validated at least one of a plurality of data records and pre-defined episode treatment categories; and

(d) grouping the validated at least one of a plurality of data records to an episode treatment group based upon the pre-defined relationship read in step (c).